

Effects of Virtual Reality and Gamification Combined with Practice Teaching Style in Physical Education Classes on Students' Perceived Health

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Abstract

The primary objective of this study was to examine the effects of virtual reality (VR) and gamification (G) when combined with the practice teaching style (PTS) during physical education classes on the perceived health of students. In this quasi-experimental study, three groups of high school students ($n = 75$, age: 13.58 ± 0.68 , consisting of 53.3% women and 46.7% men) participated. Each group was assigned to a specific teaching methodology (VR + G + PTS, G + PTS or PTS) during a six-week intervention consisting of 12 sessions. The study employed a mixed methodology, combining quantitative and qualitative research techniques. The self-rated health status assessment (Zhang et al., 2020) was administered pre- and post-intervention. Further, a repeated-measure ANOVA was performed to analyse the data. In addition, interviews and focus groups were carried out to obtain information regarding the opinions and perceptions of the students. Our analyses demonstrated an effect of time on the perceived health rate ($F = 4.83$, $p = 0.03$, $\eta_p^2 = 0.07$), suggesting differences between pre-intervention (2.97 ± 0.50 , 3.07 ± 0.83 , 3.00 ± 0.76) and post-intervention (3.11 ± 0.57 , 3.30 ± 0.54 , 3.31 ± 0.63) values for the three aforementioned methodologies. However, no inter-group differences were observed ($p = 0.70$). Therefore, the use of VR and G in conjunction with PTS does not appear to have significant impact on students' perceived health. Nonetheless, further exploration is needed to evaluate their influence on other aspects of learning.

Keywords: active methodologies, didactic experiences, teaching methodology, intervention, healthful